



### 1. DESCRIPTION

QBB1007 is a picosecond pulsed driver box for 7-pin butterfly DFB laser module of QLD106G series. 20-ps optical pulse with stable single longitudinal mode can be obtained by gain-switched operation. LD bias currents, temperatures, and the repetition rate of electrical pulses can be controlled by PC software via USB interface.

### 2. FEATURES

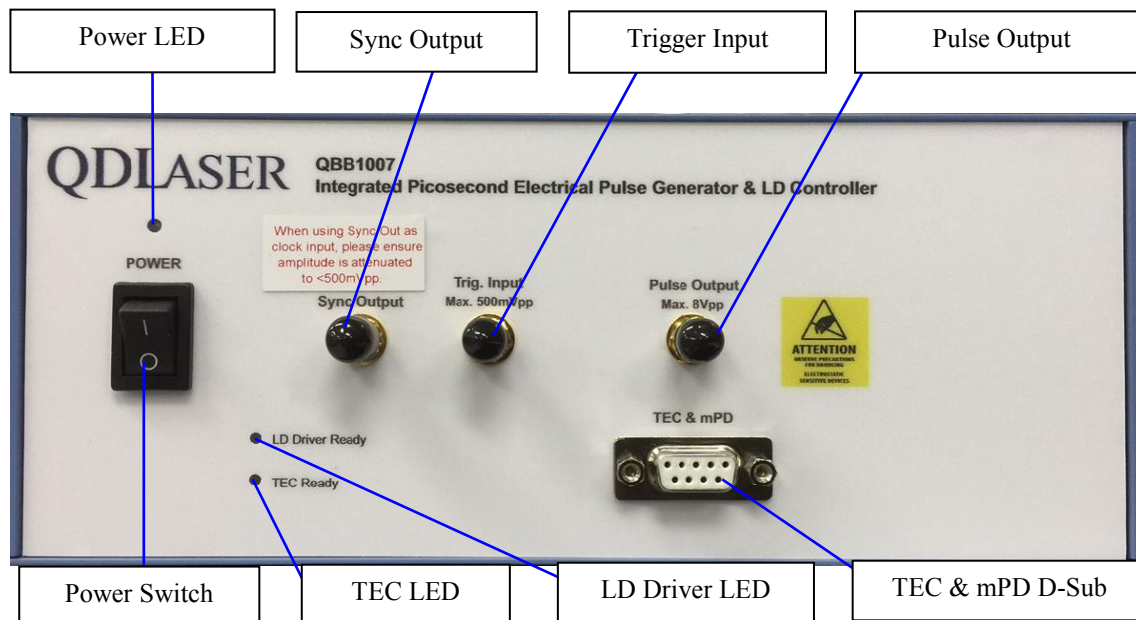
- Designed for the 7-pin butterfly DFB-LD module of QLD106G series
- 20-ps gain-switched pulse generation with a peak output power of 50 mW
- Internal clock operation with a repetition rate of 12 kHz to 250 MHz
- External clock operation with a repetition rate of up to 2 GHz
- Flexible parameter control via USB
- Plug and Play

### 3. APPLICATIONS

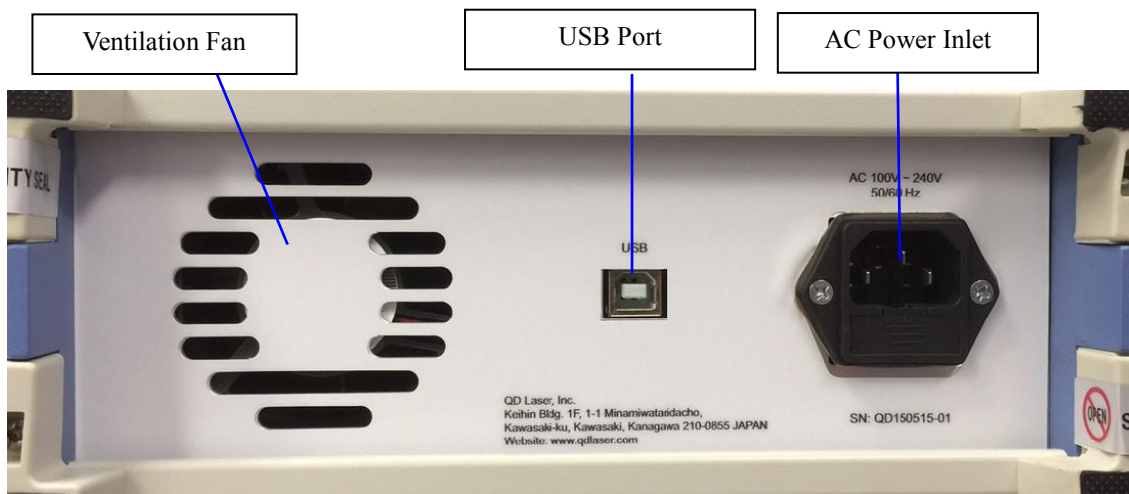
- Pulsed seeder for fiber lasers
- Time resolved measurement

## 4. APPEARANCE

### • Front Panel



### • Rear Panel



## 5. ACCESSORIES

- Power cable
- USB cable
- 9-pin D-sub cable
- Connecting adaptor for D-sub cable to butterfly module
- Document CD-ROM(manual, applicaton software)

## 6. OPTICAL AND ELECTRICAL CHARACTERISTICS

Optical specifications for QLD106G series under gain-switched operation

PARAMETER	MIN	TYP	MAX	UNIT	REMARK
Optical pulse width	-	20	-	ps	
Peak output power	-	50	-	mW	
Jitter <sub>RMS</sub>	-	1	-	ps	
Pulse to pulse stability	-	3	-	%	
Peak wavelength	-	$\lambda_p$	-	nm	Depends on integrated LD
Side-mode supression ratio	-	30	-	dB	
Spectral line width	-	0.1	-	nm	

Electrical specifications

PARAMETER	MIN	TYP	MAX	UNIT	REMARK
Electrical pulse width	-	70	-	ps	Fixed
Repetition rate tuning range (*1)	0.012	-	250	MHz	With internal clock mode
Pulse peak voltave ( $V_p$ )	-	5	8	V	Fixed
Bias current ( $I_b$ ) tuning range (*2)	0	-	200	mA	
LD chip temperature tuning range	15	25	40	°C	
Ambient temperature range	10	-	40	°C	
TEC current	-	-	1.3	A	

(\*1) Repetition rate can be tuned from single shot to 2 GHz with external clock mode.

(\*2)  $I_b$  should be set at less than 90 mA for the operation of QLD106G series.

Clock interface

PARAMETER	MIN	TYP	MAX	UNIT	REMARK
External clock frequency	-	-	2000	MHz	Single shot available
External clock voltage range	0~+1	-	-5~+5	V	
External clock rise time	-	-	10	ns	
External clock duty ratio	-	50	-	%	
Clock monitor output voltage	-	0~1	-	V	50 $\Omega$ (0~2V@Open)
Propagation delay	-	15	-	ns	Including optical fiber of 1m

Dimensions

PARAMETER	Value	UNIT
Total unit size	235 x 390 x 100 (Maximum parts high)	mm
Weight	3.3	kg

## 7. PIN CONFIGURATION

Pin Number	Description
1	TEC-
2	Reserved
3	TEC+
4	Reserved
5	TH+
6	TH-
7	PD+
8	PD-
9	Reserved

## 8. NOTICE

- Safety Information

This product is classified as Class 3B laser product, and complies with 21 CFR Part 1040.10.

Please do not take a look at laser lighting in operations since laser devices may cause troubles to human eyes.

Please do not eat, burn, break and make chemical process of the products since they contain GaAs material.

- Handling products

Semiconductor lasers are easily damaged by external stress such as excess temperature and ESD.

Please pay attention to handling products, and use within range of maximum ratings.

QD Laser takes no responsibility for any failure or unusual operation resulting from improper handling, or unusual physical or electrical stress.

- RoHS

This product conforms to RoHS compliance related EU Directive 2011/65/EU.

QD Laser, Inc.

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